

The Ohio, Cumberland and Tennessee rivers remained comparatively low throughout the month.

ICE.

The first ice reported was at Sioux City, Iowa, on the 17th. It was light running ice and reached Omaha on the 23d. None was observed below Omaha. The Red River of the North closed on the 16th at Moorhead, Minn., and the Missouri River on the 19th at Pierre, S. Dak., while the James River at Huron, S. Dak., was frozen from the 16th to the 23d, inclusive.

No ice was reported in the Mississippi River, except a little slush ice at St. Paul, Minn., on the 20th and 21st. Some ice

was also noted during the latter part of the month in the smaller streams of northern New York and northern New England.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport on the Red.—H. C. Frankenfield, Professor of Meteorology.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.

C. FITZHUGH TALMAN, Librarian.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a —.

Nature. London. v. 82. January 27, 1910.

Harwood, W. A. Upper-air temperatures registered outside and inside balloons. p. 366.

Science. New York. v. 30. December 27, 1909.

Thomson, Elihu. Atmospheric electricity. p. 857-869.

Science. New York. v. 31. January 28, 1910.

Potts, Louis M. Ball lightning. p. 144.

Jones, A. T. A laboratory illustration of ball lightning. p. 144.

Symons's meteorological magazine. London. v. 44. January, 1910.

— Capt. Henry Toynbee, 22d October, 1819-29th March, 1909. p. 225.

Fox, Wilson L., & Curtis, R. H. Standardization of sunshine recorders. p. 228-229. [Historical note as to the Jordan instrument of 1838.]

Cooke, Richard. Weather references in old parish registers. p. 232-233.

Terrestrial magnetism and atmospheric electricity. Washington. v. 14. Dec., 1909.

— Biographical sketch of Adolf Erman. p. 186. [With portrait.]

Aérophile. Paris. 18 année. 1 jan. 1910.

E., A. Les instruments de précision à l'exposition d'aéronautique de 1909. p. 13-15. [Includes description and figures of meteorological instruments for use in aeronautics.]

Journal de physique. Paris. Tome 9. Jan. 1910.

Pecsi, A. Sur la détermination de l'azimut des rayons sismiques à l'aide de divers instruments. p. 50-54.

Société belge d'astronomie. Bulletin. Bruxelles. 14 année. Dec. 1909.

Nodon, A. Un novel électromètre pour observatoire. p. 515-520. [Illustrated.]

Nodon, Albert. Influence des variations de l'activité solaire sur la physique terrestre. p. 520-522.

Himmel und Erde. Berlin. Jahrgang 22. Jan. 1910.

Mylius, E. Gewitterbildung. p. 152-156. [Illustrated.]

Meteorologische Zeitschrift. Braunschweig. Band 27. Jan. 1910.

Fessler, A. Die Kälteeinbrüche in Mitteleuropa im Winter 1908-1909. p. 1-12.

Defant, A. John Eliot, Langjährige Windregistrierungen zu Saugor Island und zu Alipore (Calcutta). p. 12-18.

Burchard, Oscar. Zur Klimatologie von Teneriffa. p. 19-23.

Lachmann, G. Victor Kremser. p. 24-25.

Wagner, A. Bemerkung zum jährlichen Gang der isothermen Zone. p. 29-30.

Hann, J[ulius]. Ist die Luft auf den Bergen kälter als die Atmosphäre in gleicher Höhe? p. 30-31.

Süring, R. Ergebnisse der Kayserschen Wolkenhöhenmessungen in Danzig. p. 31-35.

Hann, J[ulius]. Über den jährlichen Gang des Luftdruckes und das fragliche Luftdruckminimum in der Region des Tschadsees. p. 38-40.

Alessandri, C., & Eredia, F. Über den täglichen Gang der meteorologischen Elemente auf dem Monte Rosa und an dessen Fuss im Sommer. p. 40-41.

— Regenfall auf Malden Island im äquatorialen pazifischen Ozean. p. 41-42.

— Wettertypen in Ägypten. p. 42-44.

Petermanns Mitteilungen. Gotha. 55. Band. Dezember 1909.

Höck, F. Klima und Obstbau in Deutschland. p. 363-364. [Abstract of work by Bechtle.]

Schott, G. Pilotenkarten, meteorologische Karten und Monatskarten der Oceane. Ein Beitrag zur maritimen Kartographie. p. 377-379.

Prometheus. Berlin. Jahrgang 21. 29. Dez. 1909.

— Versuche mit dem Bezug von Wetter-Funktelegrammen vom nordatlantischen Ozean. p. 206-207. [Results of experiments by the Seewarte in Feb.-April & Aug.-Sept., 1909.]

Woche. Berlin. 12. Jahrgang. 22 Januar 1909.

Friedrich, Otto. Vom höchsten Einwohner des deutschen Reichs. p. 152-155. [Description of Zugspitze meteorological observatory, by the observer.]

Società spettroscopisti Italiana. Memorie. Catania. v. 38.

Bemporad, Giulio. Sulla curva rappresentativa dell'intensità della radiazione solare. p. 186. [Proposes a new formula for representing the diurnal march of the intensity of solar radiation.]

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be lent for a limited time to officials and employees who make application for them. Anonymous publications are indicated by a —.

Arnold, Hugo.

Die Erdbewegung während des ersten Vorläufers eines Erdbebens. Leipzig. 1909. p. 269-316. 8°. (Inaug.-diss.—Göttingen.)

Baden, Zentralbüro für Meteorologie und Hydrographie. Niederschlagsbeobachtungen . . . Jahrg. 1909. 1. Halbjahr. Karlsruhe. 1909. 25 p. 4°.

British Guiana. Botanic gardens.

Report 1908-1909. pt. 2. Meteorological observations. Georgetown. 1909. p. 10-16.

Colombo observatory.

Report on the Colombo observatory and the meteorology of Ceylon for 1908. [Colombo. 1909.] N 50 p. f°.

Eredia Filippo.

I venti in Italia. 10. Versante meridionali Mediterraneo. 11. Sicilia. 12. Conclusioni. Roma. 1908-1909. 4°. (Estratti dalla Rivista di aeronautica e Boll. della Soc. aeronautica Italiana.)

Geographisches Jahrbuch.

32. Band, 1909. 2^o Hälfte. Gotha. 1909. vii, 241-473 p. 8°.

Germany. Deutsche Seewarte.

Deutsches meteorologisches Jahrbuch für 1908. Ergebnisse der meteorologischen Beobachtungen an 10 Stationen II. Ordnung und an Sturmwarnungstellen, sowie stündliche Aufzeichnungen an 4 Normal-Beobachtungs-Stationen. Jahrg. 31. Hamburg. 1909. vi, 193 p. f°.

Dienstanweisung für die Sturmwarnungstellen der Deutschen Seewarte (fünfte Ausgabe) die Windsemaphorstationen und die Windmeldestellen. Hamburg. 1909. viii, 40 p. 4°.

Segehandbuch für den atlantischen Ozean. 3^o Auflage. Hamburg. 1910. xiv, 562 p. 4°.

Goetz, E.

... The rainfall of Rhodesia. London. 1909. iv, 129 p. 8°. (Proceedings of the Rhodesia scientific association. v. 8. pt. 3.)

Granada. Observatorio meteorológico de Cartuja.

Boletín anual . . . 1908. Granada. 1909. 144 p. f°.